

## DDM2 - 230 Diamond Core Drill



### Welcome to Marcrst

The information in this manual referring to specification, design, equipment, materials and external appearance relates to the time at which this manual was printed. Whilst every effort is made to ensure its accuracy, the information in this manual is not binding and is subject to alteration.

Year of manufacture 2009

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## Congratulations

You have chosen Marcris for your diamond drilling system. We thank you for your choice and confidence!

Marcris has the sole ambition to lead in diamond technology and quality. The Result is outstanding quality for the professional tradesman.

Marcris is accepted worldwide as a technology leader in diamonds. Marcris diamond tools are used by professional tradesmen who value performance, safety and the lowest possible drilling costs.

The best diamond drilling machine is only as good as the cores which are being used. The machine cannot drill if the cores don't drill!

When choosing diamond cores always consider the cost per hole rather than just the lowest purchase price.

A better core may cost a little more but it will invariably last much longer (up to 20 times) and drills at least twice as fast and does not damage the machine!

Because of this, better cores result in costing you between 10–20 times less than cheap cores.

Marcris International Ltd

**Product Management**

## Registration

Register your machine or drill stand within 28 days for its lifetime warranty and 5 years free servicing\* (with service vouchers, which you receive free with every Marcris 850X diamond core drill).

### How To Register

To activate the lifetime warranty and 5 years free servicing register your machine or drill stand by mail or via internet . Registration only takes a few minutes. It will save you lots of money.

#### By Mail

With the enclosed form and envelope.

#### Internet

[www.marcris.com/registration](http://www.marcris.com/registration).

## Guarantee

### 30 DAYS MONEY BACK GUARANTEE

If you are not completely satisfied with the performance of your machine or drill stand, simply return it within 30 days, in its original packaging, which is suitable for resale and fit for purpose, to your Marcris distributor, for a full refund.

**Proof of purchase must be produced.**

### LIFETIME MANUFACTURERS WARRANTY

If your machine or drill stand becomes defective due to faulty materials or workmanship, we guarantee to replace all defective parts free of charge or, at our discretion, replace the unit free of charge provided that:

- Proof of purchase is produced and the product has been registered.
- The defect is not due to normal wear and tear.
- The product has not been misused and has been serviced regularly.
- Professional quality consumables, capable of drilling hard materials, have been used exclusively.
- Repairs have not been attempted by unauthorised persons.

### Marcris 5 YEAR FREE MAINTENANCE AND REPAIRS\*

Your machine or drill stand has been designed to operate for a long period of time with a minimum of maintenance.

## Guarantee

Continuous satisfactory and safe operation depends however, upon proper care and maintenance.

Regularly, at least every 18 months \*\* take the machine or drill stand to your Marcris distributor for inspection which includes:

### **Machines**

- Check up / cleaning
- Clutch re-setting
- Bearing changes
- Seal replacements
- Electrical safety test

### **Drill Stands**

- Check up / cleaning
- Check operation & guide assembly
- Replace worn parts on guide system

With every Marcris 850X core purchased you receive a free service voucher. Collect vouchers and, together with the machine or drill stand needing service and your proof of purchase, hand them to your Marcris distributor. Your distributor will send the machine and vouchers to Marcris. All you have to do is to pay the postage.

If the machine or drill stand was beyond repair, Marcris would, in return for the vouchers, even give you a replacement machine or drill stand, completely free!

The cost of the postage to return the machine or drill stand to you is also covered with the vouchers.

If a machine or drill stand needing service and repair is returned without vouchers, all work and postage will be chargeable at the industry standard rate for power tool repairs.

If you have insufficient vouchers, the repair costs will be reduced as a % of your vouchers. i.e. DDM2 with 5 vouchers would equal 50% off the cost of repairs.

This guarantee is offered as an extra benefit and is in addition to the consumer's statutory rights.

\*With the free service vouchers, Marcris will, within 5 years from the date of purchase, carry out the service completely free at no charge. All costs for each service and for any parts are covered by the vouchers!

\*\*For your safety the machines & drill stands must be serviced every time you have collected the appropriate amount of vouchers (meaning you will have very extensively used the machine) or, at 18 month intervals. The guarantee may, at the sole discretion of Marcris, become null and void, if the machine or drill stand is not serviced every appropriate number of cores or within 18 months (whichever is the soonest).

### **Number of vouchers needed for FREE repair, service, safety check,**

including all parts and labour:

DDM2 diamond drill – 10 vouchers

DDM2 diamond drill – 15 vouchers


DDM4 diamond drill – 20 vouchers

DS150 drill stand – 5 vouchers

DS250 drill stand – 7 vouchers

# General Power Tool Safety Warnings



**WARNING** - Read all safety warnings designated by the  symbol and all instructions. Failure to follow the warnings and instructions may result in electric shock, fire and/or serious injury.

**Save all warnings and instructions for future reference.**

## 1) Work area safety

- a)** Keep work area clean and well lit. Cluttered or dark areas invite accidents.
- b)** Do not operate power tools in explosive atmospheres, such as in the presence of flammable liquids, gases or dust. Power tools create sparks which may ignite the dust or fumes.
- c)** Keep children and bystanders away while operating a power tool. Distractions can cause you to lose control.

## 2) Electrical safety

- a)** Power tool plugs must match the outlet. Never modify the plug in any way. Do not use any adapter plugs with earthed (grounded) power tools. Unmodified plugs and matching outlets will reduce risk of electric shock.
- b)** Avoid body contact with earthed or grounded surfaces, such as pipes, radiators, ranges and refrigerators. There is an increased risk of electric shock if your body is earthed or grounded.
- c)** Do not expose power tools to rain or wet conditions. Water entering a power tool will increase the risk of electric shock.
- d)** Do not abuse the cord. Never use the cord for carrying, pulling or unplugging the power tool. Keep cord away from heat, oil, sharp edges or moving parts. Damaged or entangled cords increase the risk of electric shock.
- e)** When operating a power tool outdoors, use an extension cord suitable for outdoor use. Use of a cord suitable for outdoor use reduces the risk of electric shock.
- f)** If operating a power tool in a damp location is unavoidable, use a residual current device (RCD) protected supply. Use of an RCD reduces the risk of electric shock.

## 3) Personal Safety

- a)** Stay alert, watch what you are doing and use common sense when operating a power tool. Do not use a power tool while you are tired or under the influence of drugs, alcohol or medication. A moment of inattention while operating power tools may result in serious personal injury.
- b)** Use personal protective equipment. Always wear eye protection. Protective

equipment such as dust mask, non-skid safety shoes, hard hat, or hearing protection used for appropriate conditions will reduce personal injuries.

**c)** Prevent unintentional starting. Ensure the switch is in the off-position before connecting to power source and/or battery pack, picking up or carrying the tool. Carrying power tools with your finger on the switch or energising power tools that have the switch on invites accidents.

**d)** Remove any adjusting key or wrench before turning the power tool on. A wrench or a key left attached to a rotating part of the power tool may result in personal injury.

**e)** Do not overreach. Keep proper footing and balance at all times. This enables better control of the power tool in unexpected situations.

**f)** Dress properly. Do not wear loose clothing or jewellery. Keep your hair, clothing and gloves away from moving parts. Loose clothes, jewellery or long hair can be caught in moving parts.

**g)** If devices are provided for the connection of dust extraction and collection facilities, ensure these are connected and properly used. Use of dust collection can reduce dust-related hazards.

#### **4) Power tool use and care**

**a)** Do not force the power tool. Use the correct power tool for your application. The correct power tool will do the job better and safer at the rate for which it was designed.

**b)** Do not use the power tool if the switch does not turn it on and off. Any power tool that cannot be controlled with the switch is dangerous and must be repaired.

**c)** Disconnect the plug from the power source and/or the battery pack from the power tool before making any adjustments, changing accessories, or storing power tools. Such preventive safety measures reduce the risk of starting the power tool accidentally.

**d)** Store idle power tools out of the reach of children and do not allow persons unfamiliar with the power tool or these instructions to operate the power tool. Power tools are dangerous in the hands of untrained users.

**e)** Maintain power tools. Check for misalignment or binding of moving parts, breakage of parts and any other condition that may affect the power tool's operation. If damaged, have the power tool repaired before use. Many accidents are caused by poorly maintained power tools.

**f)** Keep cutting tools sharp and clean. Properly maintained cutting tools with sharp cutting edges are less likely to bind and are easier to control.

**g)** Use the power tool, accessories and tool bits etc. in accordance with these instructions, taking into account the working conditions and the work to be performed. Use of the power tool for operations different from those intended could result in a hazardous situation.

#### **5) Service**

**a)** Have your power tool serviced by a qualified repair person using only identical replacement parts. This will ensure that the safety of the power tool is maintained.

## DDM2 – 230 Safety Warnings & Information

### Observe Safety Instructions

When using the DDM2 - 230 observe the safety regulations applicable to your country to reduce the risk of fire, electric shock and personal injury.



Read the safety instructions before attempting to operate the DDM2 - 230. Save all warnings and instructions for future reference.

### Operational Safety

- The DDM2 - 230 is a professional drilling machine capable of drilling up to 200mm diameter and its internal clutch is calibrated to accommodate this.

- When drilling, at all times, care must be taken.



- Please study carefully the safety instructions and the training manual.

- Make sure that everybody who works with the DDM2 - 230 gets properly instructed to the machine and its instructions prior to use.

- Assess the work area and employ measures to minimise any risks to you or other persons.

- Always ensure you are working safely and within current legislation and regulations.



- Always wear eye protection, ear protection, dust mask and safety boots.

- Hold the DDM2 - 230 firmly with both hands.

- Always be aware that if the core bit jams the drill may rotate before the clutch engages.

- Never drill from a position where you are not in full control of the DDM2 - 230.

- If drilling above chest height, work platforms should be used.

- Never drill from a ladder.

- Try to avoid continuous operation and consider a break once in a while. Stop working immediately if you notice a tingle in your hands.

**Above points are to be observed at any time. Failing to comply may result in serious damage or endanger your health. If there are any questions or queries, please contact your dealer.**

## Using Instructions

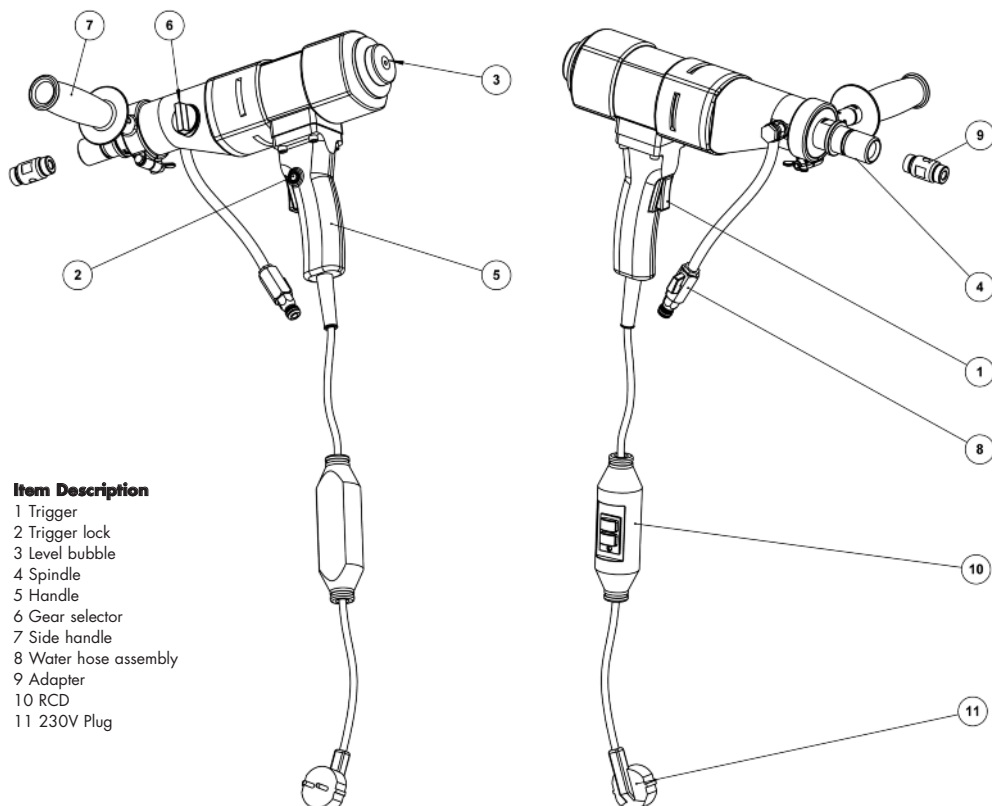
Your DDM2 - 230 machine is supplied so it can be used with Marcris diamond cores & drilling accessories. Only use the DDM2 - 230 for the purpose for which it was designed i.e. diamond drilling!

### Contents

- DDM2 – 230V diamond drilling machine.
- 1/2" BSP to 1/2" BSP adaptor.
- Spanners to help set up and removal of core drills & accessories from the machine.

### Illustrated description of functions

The main functions of the DDM2 - 230 are illustrated below.

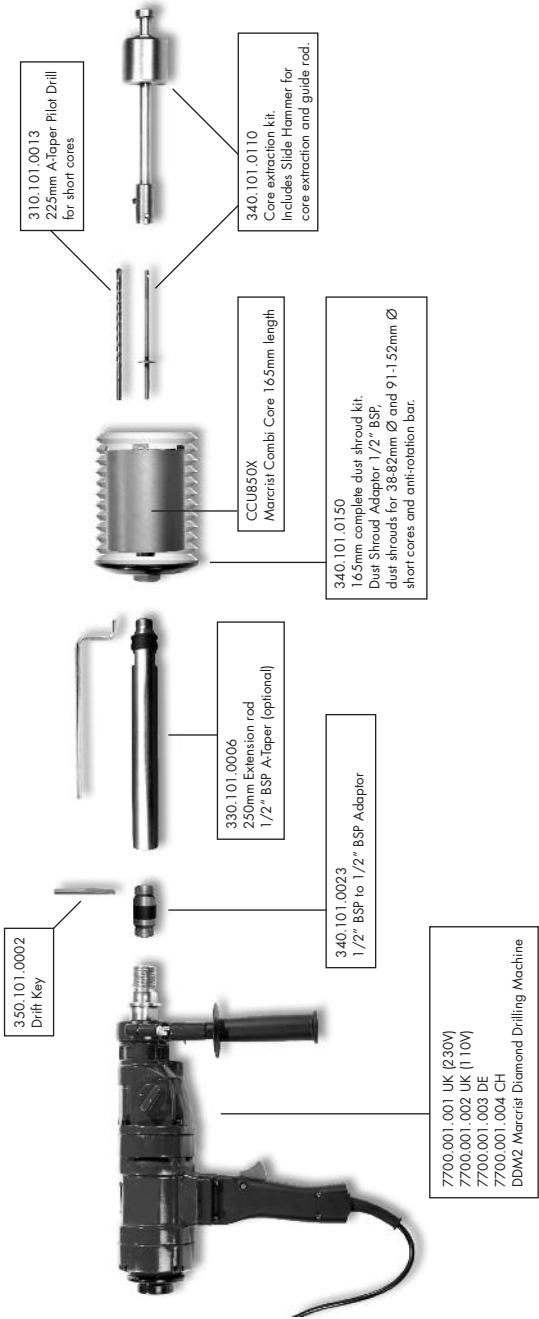


#### Item Description

- 1 Trigger
- 2 Trigger lock
- 3 Level bubble
- 4 Spindle
- 5 Handle
- 6 Gear selector
- 7 Side handle
- 8 Water hose assembly
- 9 Adapter
- 10 RCD
- 11 230V Plug

# Operational Diagram for Short and Long Cores

An operation diagram showing typical assembly with core drills & accessories is shown below.



## Connection to the power supply

### Electrical safety

The electric motor has been designed for one voltage only. Always check that the power supply corresponds to the voltage on the nameplate.



Do not change the plug unless you are duly authorised to do so!  
Take the DDM2 - 230 to your nearest Marcris Distributor.

### In-line protector RCD

The DDM2 – 230 features a residual current device that cuts off the unit within 15 milliseconds in the event that there is a difference ( $>10$  mA) between the currents flowing in and out of the unit. The user is therefore protected should any water come into contact with any of the electronic components.



Never use the tool without the RCD provided with the tool. Always test the correct operation of the RCD before starting work (see below).

To test the RCD unit is working correctly, proceed as follows:

- Plug in machine into the appropriate power supply (11).
- Depress the reset button on RCD (10) (Red light indicator is illuminated).
- Switch on the machine by depressing trigger (1).
- Depress the test button on RCD (10).
- The switch must break the circuit (red light indicator goes off and machine switches off).
- RCD is working correctly.



If in the test mode the switch does not break the circuit DO NOT USE.  
Take the DDM2 - 230 to your nearest Marcris Distributor to arrange inspection & repair.



It is not permitted to make any modifications to the machine, in particular it is not allowed to open the RCD or to repair or to replace the cable. If it is need of inspection or repair take to your nearest Marcris distributor.



Never use the RCD as a main switch. Always switch on the RCD under no load condition.



If an extension cable is to be used always ensure it is of an approved type for application and the cable is of a minimum rating for the machine. Always operate extension cord with the cable reel fully unwound.



Use in ambient conditions.

It is not recommended to use your DDM2 - 230 machine in conditions that are extreme hot or extreme cold. Do not use the machine in wet conditions.

## Operating Instructions



**Follow all safety instruction and observe any relevant regulations.**

### Work piece and working area



Always ensure that materials to be drilled are securely supported and stable and will not move during operation. Ensure that the core drill selected is suitable for the material being drilled.

Be aware of the location of pipe work, wiring, fixture and fittings.

### Gear Selection

1. Ensure power supply is off. When selecting any gear rotate the drill spindle (4) slowly while turning the selector (6) to the appropriate speed. This will ensure smooth selection of gear.
2. Do not change gears when the tool is rotating and in use. Failure to follow this instruction could result in damage to the machine.
3. See speed chart on page 12. Adjust the speed for harder/softer materials accordingly. Lower speeds should be used for harder materials, higher speed for softer materials.

### Assembly & operation

1. Plug in machine into the appropriate power supply (11).
2. Test correct operation of RCD (10) unit before use (see above).
3. Disconnect power. For core drills with  $\frac{1}{2}$ " BSP thread, screw  $\frac{1}{2}$ " BSP adaptor (9) into drill spindle (4).
4. Screw core drill with  $\frac{1}{2}$ " BSP thread onto adaptor (9).
5. For core drills with  $1\frac{1}{4}$ " UNC thread, screw directly into drill spindle (4).
6. Hold firmly the side handle (7) with one hand and main handle (5) with other hand.
7. To operate the machine depress the trigger (1).
8. With core drill running approach the surface to be drilled with the drill at an angle of approximately 15 degrees. As the segments bite gradually bring to a horizontal position and continue drilling.
9. For continuous operation depress the trigger lock button on handle (5) while trigger (1) is operated.
10. Apply only gentle pressure during operation. Excessive force may damage the machine or accessories and could result in a shortening of tool life.
11. To stop drilling depress the trigger (1).
12. Disconnect the power from the supply.
13. Remove the core from DDM2 - 230 or adaptor (9) using the spanners provided.

### Accessories

Drilling aids and accessories are available from Marcris. Contact your Marcris dealer for more information.

Always follow the manufactures guidelines when attaching accessories to the machine.

## Connection to water supply for hand held wet drilling.

Certain very hard materials such as reinforced concrete can present problems for dry drilling. They may cause excessive heat & consequent polishing (blunting) of the diamond segment on the core.

This can result in poor drilling performance and can be overcome by connection of a suitable water supply onto the hose of the DDM2 - 230 machine using a "Gardena" or "Hozelock" type fitting as shown in the diagram below.



1. Connect the 350mm long water hose (8) on DDM2 - 230 to a suitable water supply by push fitting into a "Gardena" or "Hozelock" type fitting which is attached to a hose pipe. The hose pipe could be typically between 5m - 20m in length.
2. Turn on water supply.
3. Turn on tap on the water hose so that a steady flow of water cools the segments on the core.



Do not exceed the recommended maximum water pressure of 2 bar.



The hose (8) should always be checked that is in a satisfactory condition before use and is not split and does not leak water. **DO NOT USE IF THE HOSE IS LEAKING WATER OR IS DAMAGED.**

A minimal flow of water direct to the core segments & material helps cool the drilling area & improve drilling performance.



Keep water away from the parts of the tool & away from persons in the working area.



Always test the correct operation of the RCD before starting work.



If the plug or supply cable needs replacing then take the DDM2 - 230 to your nearest Marcris Distributor.

## Maintenance

Your Marcrist diamond-drilling machine is manufactured to the highest possible standards. Continuous satisfactory operation depends upon the proper servicing and maintenance of the drilling machine.

For your safety the machine must be serviced every time you have collected 10 vouchers (meaning you will have very extensively used the machine) or, at 18 month intervals. The guarantee may, at the sole discretion of Marcrist, become null and void, if the machine is not serviced every 10 cores or within 18 months (whichever is the soonest).



If replacement of the supply cable or plug is necessary, take the DDM2 - 230 to your nearest Marcrist Distributor to avoid a safety hazard.

Keep the ventilation slots clear of dust and foreign objects. Regularly clean the machine with a damp cloth. Do not use chemicals to clean the machine.

## Emissions

### Sound Levels

Level of sound pressure measured according to EN 60745-2-1: 2003 + A11: 2007

LpA (sound pressure level) 88.90 dB(A)

LwA (sound power level) 99.90 dB(A)

Uncertainty K : 3 dB (A)



Always take suitable measures for the protection of your hearing.

### Acceleration & Vibration Value

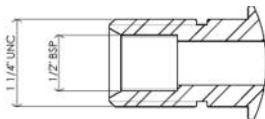
Maximum vibration value  $a_{h,DD}$  drilling into concrete:  $8.797 \text{ m/s}^2$

Uncertainty (K):  $1.50 \text{ m/s}^2$

Tested in accordance with EN60745-2-1: 2003 + A11: 2007

Values are dependant on local conditions and will vary with the condition and diameter of the core being used on the DDM2 – 230 and also on the material being drilled.

# Technical Data

Technical data		DDM2 - 230	
Voltage	230 V		
Power Input	1500 W		
No load speed			
1st gear	950 min <sup>-1</sup>		
2nd gear	2100 min <sup>-1</sup>		
Maximum drilling diameter with diamond core bits	Gear	Wet	Dry
	1	ø53-200mm	ø108-200mm
	2	ø22-52mm	ø22-107mm
Outer thread 1 1/4" UNC (32mm) Inner thread 1/2" BSP (19mm)			
Spindle thread			
Side handle clamp	60 mm		
Weight	6.9 kg		

Maximum diameter shown on the label only applies to Marcris core drills. By using low quality core drills the maximum usable diameter will be reduced.



**WARNING - Read all safety warnings designated by the  symbol and all instructions.** Failure to follow the warnings and instructions may result in electric shock, fire and/or serious injury.

## Torque limiting clutch

The DDM2 - 230 is equipped with a torque-limiting clutch that reduces the maximum torque reaction transmitted to the operator in case of jamming of a core bit. This feature also prevents the gearing and electric motor from stalling. The torque-limiting clutch has been factory-set.

## CE-Declaration of conformity

Marcris declares that the DDM2 - 230 Drilling Machine conforms to all current standards and directives EN60745-1: 2006, EN60745-2-1: 2003 +A11: 2007, EN55014-1: 2006, EN55014-2/A1: 2001, EN61000-3-2: 2006, EN61000-3-11: 2000, 98/37/EC, 2006/95/EC, 2004/108/EC. A detailed certificate of conformity is available upon request.



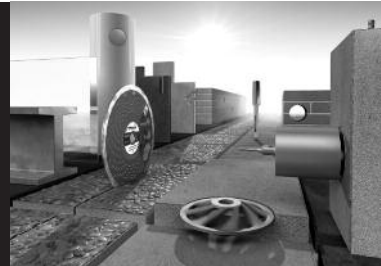
## Recycling

According to WEEE directive 2002/96/EC, old machinery should be returned for recycling or safe disposal when they eventually become to be thrown away (see symbol on nameplate of the drill). Separate collection of used products and packaging allows materials to be recycled and used again. Re-use of recycled materials helps prevent environmental pollution and reduces the demand for raw materials. Ensure that the old tool is returned to Marcris International Ltd and does not end up in unsorted municipal solid waste.

## Technical Hotline

### **For all your technical queries:**

Technical Hotline UK:	+44 (0) 1302 893 253
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